From: R4LIMS
To: Atashi, Neema

Cc: Turner, Nardina; Saskowski, Ronald; Adams, Daniel N.; Wellborn, Floyd; Aker, Sandra

**Subject:** R4 LIMS Results: Project 20-0244, E201504,E201601 CNA 04 23 20 1519

**Date:** Friday, April 24, 2020 8:00:42 AM

**Attachments:** <u>E201504,E201601 CNA FINAL 04 23 20 1519.PDF</u>

E201504,E201601 CNA FINAL 04 23 20 1519 - 20-0244 - CRISTEX DRUM SITE 04-24-2020.110009261663.Dat

On Thursday, April 23, 2020, results for the following were released by the Region 4 Laboratory:

## **Analyses:**

Classical/Nutrient Analyses (CNA)

**Project Number: 20-0244** 

**Project Name:** Cristex Drum Site

City: Oxford County: Granville State: NC

## These results were reported by:

Daniel Adams ( E-mail: <u>Adams.Daniel@epa.gov</u> )

If you have questions concerning the laboratory results, please feel free to contact the laboratory personnel shown above as having reported the data. We also encourage you to provide feedback to the Region 4 laboratory by filling out our online (*EPA internal network only*) <u>Customer Survey Form</u>.

## These results are for the following Sample Type(s):

Water (Groundwater)

Water (Preservative Blank)

#### PDF DATA RESULTS REPORT FILE ATTACHMENT:

An Adobe Acrobat PDF file is attached to this message that contains final results for the analyses as indicated in the data report.

#### DATA EXPORT FILE ATTACHMENT:

If attached, data export files will be tab delimited ASCII text files contained in a file that has been formatted using the ZIP archiving format (.Dat extension). Please consult your local computer support personnel if you have problems extracting these files. If you have questions about the data file formats and the information contained in these files, or if you would like to request export files for previously reported data, use the contact information shown below to contact the appropriate person with your concerns. To generate export files for previously reported data we'll need the name of the PDF report file that was attached to the original transmittal message.

For questions concerning this message and attachments, or any other LIMS or data reporting issues, please call the LSASD PC Hotline at 706-355-8825 or send an email to <a href="mailto:r4lims@epa.gov">r4lims@epa.gov</a>.

#### SAMPLE DISPOSAL POLICY:

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.

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Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

**April 23, 2020** 

#### 4LSASD-LSB

### **MEMORANDUM**

**SUBJECT:** FINAL Analytical Report

Project: 20-0244, Cristex Drum Site

FROM: Daniel Adams

ICS Analyst

**THRU:** Floyd Wellborn, Chief

LSB Inorganic Chemistry Section

TO: Neema Atashi

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Classical/Nutrient Analyses (CNA)		
Classical/Nutrients	SM 2320B (Water)	ISO
Classical/Nutrients	SM 5310B (Water)	ISO
Nitrate and/or Nitrite	EPA 353.2 (Water)	ISO



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cc: Nardina Turner



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

## SAMPLES INCLUDED IN THIS REPORT

## Project: 20-0244, Cristex Drum Site

Sample ID	Laboratory ID	Matrix	<b>Date Collected</b>	Date Received
PB001	E201504-01	Preservative Blank	4/8/20 15:00	4/10/20 10:20
MW24S	E201504-04	Groundwater	4/8/20 09:20	4/10/20 10:20
MW25I	E201504-05	Groundwater	4/8/20 13:20	4/10/20 10:20
MW925I	E201504-06	Groundwater	4/8/20 13:20	4/10/20 10:20
MW25S	E201504-07	Groundwater	4/8/20 11:40	4/10/20 10:20
MW26I	E201601-02	Groundwater	4/10/20 13:10	4/13/20 10:45
MW27D	E201601-03	Groundwater	4/12/20 09:00	4/13/20 10:45
MW28I	E201601-04	Groundwater	4/11/20 15:45	4/13/20 10:45



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

#### DATA QUALIFIER DEFINITIONS

U The analyte was not detected at or above the reporting limit.

#### ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

- MDL Method Detection Limit The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
- MRL Minimum Reporting Limit Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
- TIC Tentatively Identified Compound An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

#### **ACCREDITATIONS:**

ISO ASB is accredited by ISO/IEC 17025, including an amplification for forensic accreditation through ANSI-ASQ National Accreditation Board.

Refer to the certificate and scope of accreditation AT-1644 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd

NR The EPA Region 4 Laboratory has not requested accreditation for this test.



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: PB001 Lab ID: E201504-01
Station ID: Matrix: Preservative Blank

Date Collected: 4/8/20 15:00

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
E701250	Total Organic Carbon	1.0	U	mg/L	1.0	4/16/20 14:26	4/20/20 15:38	SM 5310B



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW24S

Station ID: MW24S

Matrix: Groundwater

**Date Collected: 4/8/20 9:20** 

	110/20 7120						
CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	63	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	5.4	mg/L	1.0	4/16/20 14:26	4/20/20 16:03	SM 5310B
E701177	Nitrate/Nitrite as N	0.75	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW25I Lab ID: E201504-05
Station ID: MW25I Matrix: Groundwater

Date Collected: 4/8/20 13:20

Date Co	110120 10120						
CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	180	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	1.0 <b>U</b>	mg/L	1.0	4/16/20 14:26	4/20/20 17:21	SM 5310B
E701177	Nitrate/Nitrite as N	1.1	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW925I Lab ID: E201504-06
Station ID: MW25I Matrix: Groundwater

Date Collected: 4/8/20 13:20

Dute co	11cctcu: 4/0/20 15:20						
CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	170	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	1.0 <b>U</b>	mg/L	1.0	4/16/20 14:26	4/20/20 17:49	SM 5310B
E701177	Nitrate/Nitrite as N	1.1	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



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Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW25S

Station ID: MW25S

Lab ID: E201504-07

Matrix: Groundwater

Date Collected: 4/8/20 11:40

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	170	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	12	mg/L	1.0	4/16/20 14:26	4/20/20 18:14	SM 5310B
E701177	Nitrate/Nitrite as N	1.0	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW26I

Station ID: MW26I

Matrix: Groundwater

Date Collected: 4/10/20 13:10

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	150	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	8.3	mg/L	1.0	4/16/20 14:26	4/20/20 18:39	SM 5310B
E701177	Nitrate/Nitrite as N	0.050 U	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW27D

Station ID: MW27D

Matrix: Groundwater

Date Collected: 4/12/20 9:00

Date Co.							
CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	200	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	8.5	mg/L	1.0	4/16/20 14:26	4/20/20 19:03	SM 5310B
E701177	Nitrate/Nitrite as N	0.050 U	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# **Classical/Nutrient Analyses**

Project: 20-0244, Cristex Drum Site

Sample ID: MW28I

Station ID: MW28I

Matrix: Groundwater

Date Collected: 4/11/20 15:45

CAG							
CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1640192	Alkalinity, Total (as CaCO3)	130	mg/L	1.0	4/14/20 9:26	4/14/20 10:18	SM 2320B
E701250	Total Organic Carbon	5.7	mg/L	1.0	4/16/20 14:26	4/20/20 19:28	SM 5310B
E701177	Nitrate/Nitrite as N	0.64	mg/L	0.050	4/21/20 11:11	4/21/20 15:34	EPA 353.2



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Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# Classical/Nutrient Analyses (CNA) - Quality Control US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2004011 - C 2320B Alkalinity										
Blank (2004011-BLK1)				Prepared &	Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	U	1.0	mg/L							U
LCS (2004011-BS1)				Prepared &	z Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	52.313	1.0	mg/L	50.000		105	93-114			
LCS (2004011-BS2)				Prepared &	Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	52.219	1.0	mg/L	50.000		104	93-114			
LCS (2004011-BS3)				Prepared &	z Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	52.288	1.0	mg/L	50.000		105	93-114			
LCS Dup (2004011-BSD1)				Prepared &	z Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	52.785	1.0	mg/L	50.000		106	93-114	0.898	10	
<b>Duplicate (2004011-DUP1)</b>	Sou	rce: E201504-	05RE1	Prepared &	z Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	175.63	1.0	mg/L		175.88			0.144	10	
MRL Verification (2004011-PS1)				Prepared &	z Analyzed:	04/14/20				
SM 2320B										
Alkalinity, Total (as CaCO3)	1.0660		mg/L	1.0000		107	73-134			MRL-2, MRL-2
Batch 2004025 - C 415 TOC Wtr										
				D 1.0	)4/1 <i>6/</i> 20 A	1 1 04	1/20/20			
Blank (2004025-BLK1)				rrepared: (	04/16/20 At	iaiyzea: 04	1/20/20			
SM 5310B Total Organic Carbon	U	1.0	mg/L							U
LCS (2004025-BS1)				Prepared: (	)4/16/20 At	nalyzed: 04	1/20/20			
SM 5310B	19 760	1.0		50,000		07.5	00 110			
Total Organic Carbon	48.760	1.0	mg/L	50.000		97.5	90-110			



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# Classical/Nutrient Analyses (CNA) - Quality Control US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Kesuit	Liiiit	Onits	Tevel	Result	/OKEC	Limits	KfD	Lillit	110168
Batch 2004025 - C 415 TOC Wtr										
LCS (2004025-BS2)				Prepared: (	04/16/20 Ar	alyzed: 04	1/20/20			
SM 5310B Total Organic Carbon	4.9990	1.0	mg/L	5.0000		100	90-110			
LCS Dup (2004025-BSD1)				Prepared: (	)4/16/20 Ar	nalyzed: 04	1/20/20			
SM 5310B Total Organic Carbon	48.730	1.0	mg/L	50.000		97.5	90-110	0.0615	10	
Matrix Spike (2004025-MS1)	Sou	rce: E201504-	04	Prepared: (	04/16/20 Ar	nalyzed: 04	1/20/20			
SM 5310B										
Total Organic Carbon	50.700	1.0	mg/L	50.000	5.3720	90.7	90-110			
Matrix Spike Dup (2004025-MSD1)	Sou	rce: E201504-	04	Prepared: (	04/16/20 Ar	nalyzed: 04	1/20/20			
SM 5310B				•		•				
Total Organic Carbon	50.230	1.0	mg/L	50.000	5.3720	89.7	90-110	0.931	10	QM-1
MRL Verification (2004025-PS1)				Prepared: (	)4/16/20 Ar	nalyzed: 04	1/20/20			
SM 5310B Total Organic Carbon	1.0900	1.0	mg/L	1.0000		109	70-130			MRL-2
Batch 2004032 - C 353.2 NO3-NO2										
Blank (2004032-BLK1)				Prepared &	: Analyzed:	04/21/20				
EPA 353.2 Nitrate/Nitrite as N	U	0.050	mg/L	1	,					U
LCS (2004032-BS1)				Prepared &	: Analyzed:	04/21/20				
EPA 353.2 Nitrate/Nitrite as N	0.49400	0.050	mg/L	0.50150		98.5	90-110			
Matrix Spike (2004032-MS1)	Sou	ırce: E201601-	04	Prepared &	: Analyzed:	04/21/20				
EPA 353.2					•					
Nitrate/Nitrite as N	1.1348	0.050	mg/L	0.50150	0.64150	98.4	90-110			
Matrix Spike Dup (2004032-MSD1)	Sou	ırce: E201601-	04	Prepared &	: Analyzed:	04/21/20				
EPA 353.2 Nitrate/Nitrite as N	1.1354	0.050	mg/L	0.50150	0.64150	98.5	90-110	0.0529	10	



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

Project: 20-0244, Cristex Drum Site - Reported by Daniel Adams

# Classical/Nutrient Analyses (CNA) - Quality Control US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2004032 - C 353.2 NO3-NO2										

mg/L

0.050

0.052700

MRL Verification (2004032-PS1)

0.050000 105 70-130 MRL-2



Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 20-0244

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### Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

MRL-2 MRL verification for Non-Potable Water matrix

QM-1 Matrix Spike Recovery less than method control limits